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10/621,808

07/17/2003

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EXAMINER

BURROWES, LAWRENCE J

ART UNIT

PAPER NUMBER

2616

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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3 MONTHS

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                                  |                               |  |
|------------------------------|----------------------------------|-------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/621,808    | Applicant(s)<br>CHEUNG ET AL. |  |
|                              | Examiner<br>LAWRENCE J. BURROWES | Art Unit<br>2616              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/17/2003 &amp; 8/31/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Priority***

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. KR 2002-81386, filed on December 18th, 2002.

### ***Claim Objections***

2. Claims 4, 7 and 8 objected to because of the following informalities:

In claim 4 line 4, the recitation of "mode set unit" seems to refer back to "mode set unit" in claim 2 lines 6, if this is true, it is suggested applicant change to ---the mode set unit---. Similar problem exists in claims 7 and 8.

In claim 8 line 2, the recitation of "a plurality of switches" seems to refer back to "a plurality of switches" in claim 1, if this is true, it is suggested applicant change to ---said plurality of switches---.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 16 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In claim 16, the recitation of "A recording medium readable by a computer" is not a useful process, machine, manufacture or composition of matter or any new and useful improvement thereof.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 7-12, and 14-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Caldara et al (5,872,769) hereafter Caldara.

For claims 1-5, 7-12, and 14-16, Caldara discloses a multi-functional switch fabric apparatus (see column 4 lines 29-40) comprising: a plurality of input data processors, which copy, distribute, switch, and output input user data according to a mode set signal from the outside (see Figure 1 Box 20, Examiner interprets the Input Ports 0-n processes data input into the system and are controlled by the bandwidth arbiter which sets the conditions); a switch fabric unit, which includes a plurality of switching units and selectively outputs the user data input from the plurality of input data processors according to the mode set signal (see Figure 1 Box 13, Examiner interprets the crossbar data switch is controlled by the bandwidth arbiter which sets the conditions); a plurality of output data processors, which buffer, schedule, multiplex, and output the user data input from the switch fabric unit (see Figure 1 Box 22, Examiner interprets the Output Ports 0-n process data sent from the switch and are controlled by the bandwidth arbiter which sets the conditions); and a control unit, which outputs the mode set signal to control the plurality of input data processors, the switch fabric unit, and

the plurality of output data processors (see Figure 1 Box 12, Examiner interprets the control unit as the bandwidth arbiter since it is controlling the I/O ports and data switch);

wherein the output data processor comprises: a filter unit, which selectively passes the user data input from the switch fabric unit according to the mode set signal (see Figure 1 Box 16, the data interface passes the data from the switch according to the control interface); a plurality of buffer units, which buffer the user data passed through the filter unit (see Figure 2 Box 22, the output has a plurality of buffers); a path change unit, which selects and outputs the user data input from the plurality of buffer units according to a predetermined path change signal (see column 5 lines 34-50, a cell is scheduled for transmission on a path depending on the bandwidth control signal); and a path control unit, which outputs the path change signal according to the mode set signal (see column 5 lines 34-50, the controller in the controls which path the data will take with respect to the associated bandwidth;

wherein the input data processor comprises: a path and mode set unit, which copies, switches, or distributes the user data to a path that is set based on the mode set signal (see Figure 1 Box 14, the data interface is connected to the path and the bandwidth arbiter is the mode controller); and a plurality of unit inlet data processors, which are connected to the path and mode set unit to buffer, virtual output buffer queue, schedule, switch, or de-multiplex the user data (see column 4 lines 51-64, the inlet data processors buffer the input data);

wherein the plurality of switching units included in the switch fabric unit are crossbar switches (see Figure 2 Box 10 and column 5 lines 14-16, the switch is a N x N switch which is a crossbar switch), and the control unit outputs a first, second and third mode set signal (see column 4 lines 65-67 and column 5 lines 1-13, the control unit of the input port sends signals of either UBR, ABR or CBR to set the path to which the data should be and specific bandwidth), which allows the path and mode set unit to copy and supply the user data to the plurality of unit inlet data processors, at least one of the switching units to operate as an active switch (see Figure 10, switching fabric is active when sending data to the ports), and the outlet data processor to select one of the user data input from the switch fabric unit as an effective data (see Figure 2 Box 10, the output data processors selects the switches depending on the control signal from the input port).

wherein the outlet data processor selects the user data, which is provided from the switch in an active state, as the effective data (see Figure 2, the output data processors receive data from an active switch as data associated with a specific quality of service).

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 6 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caldara in view of Cummings et al (6,240,087) hereafter Cummings.

For claims 6 and 13, Caldara disclose all of the limitations of the claimed invention except wherein when an error occurs in the connection to the switch operating in an active state, the output processors selects the user data, which is provided from the switch in an a standby mode, as an effective state. Cummings from the same or similar fields of endeavor teaches wherein when an error occurs in the connection to the switch operating in an active state, the output processors selects the user data, which is provided from the switch in an a standby mode, as an effective state (see column 44 lines 30-34, when a fault occurs the switch will go to the standby copy of the data). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify/implement the fault algorithm of Cummings into ATM switch of Caldara by programming the output processors to perform the desired step. The motivation

for doing so would be so that there is no loss or delay of the data being transmitted in the switch making the system fault-tolerant.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Golla et al (2002/0176431), Turner et al (6907041), Dell et al (2002/0075883, Han et al (6904047), Reches (2002/0110086), Minkenburg (2002/0064156), and Valizadeh (5765032).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAWRENCE J. BURROWES whose telephone number is (571) 270-1419. The examiner can normally be reached on Monday - Thursday 8am - 2pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing F. Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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LJB



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SUPERVISORY PATENT EXAMINER